Product Information Sheet

Panasonic Batteries
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Product: **Sealed Lead Acid Batteries (SLA)**

Applicable models/sizes: All

Revision: A; Dated 6/2/99

The batteries referenced herein are exempt articles and are not subject to the OSHA Hazard Communication Standard requirement. This sheet is provided as a service to our customers.

MSDS

Material Safety Data Sheets (MSDS) are a sub-requirement of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR Subpart 1910.1200 This Hazard Communication Standard does not apply to various subcategories including anything defined by OSHA as an "article". OSHA has defined "article" as a manufactured item other than a fluid or particle; (i) which is formed to a specific shape or design during manufacture, (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e g. minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.

Because all of our batteries are defined as "articles", they are exempt from the requirements of the Hazard Communication Standard, hence a MSDS is not required

The following components are found in a Panasonic Sealed Lead Acid battery:

Component	Material	Formula
Positive Electrode	Lead Dioxide	PbO_2
Positive Electrode	Lead Sulfate	$PbSO_4$
Negative Electrode	Lead	Pb
Electrolyte	Sulfunc Acid	H_2SO_4

The overall reaction is: $PbO_2 + Pb + 2H_2SO_4 \Leftrightarrow 2PbSO_4 + 2H_2O$

Potential Health Hazards

Sealed Lead Acid batteries do not leak electrolyte under normal usage conditions Severely, overcharged or abused batteries may leak very small amounts of electrolyte In the case of skin exposure, wash any exposed skin with copious amounts of water It is advisable to wear gloves and safety glasses when handling leaking batteries

Assure Proper Recycling!

Sealed Lead Acid batteries destined for recycling can be managed under the federal *Universal Waste Rule* codified at 40 CFR Part 273.

In the event of disposal, dispose only in accordance with federal, state and local regulation Batteries generated as a waste are subject to the Resource Conservation and Recovery Act (RCRA) as a D008 (lead) hazardous waste

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Panasonic SLA Recycling Program

The Panasonic SAV-LEAD Recycling Program for the collection and recycling of sealed lead acid batteries (SLA) covers all Panasonic Sealed Lead Acid Batteries The proper disposal of spent SLA batteries is becoming more of a critical issue, both from the viewpoint of environmental stewardship and from compliance with federal and state environmental regulations Panasonic recognizes the burdens and responsibilities that have been placed on our customers to properly dispose of spent SLA batteries and is proud to offer this voluntary nationwide battery recycling program.

Federal and State Requirements for Proper Disposal

Federal and State laws prohibit the improper disposal of all lead acid batteries The battery end users (owners) are responsible for their batteries from the date of purchase through their ultimate disposal. The only legally acceptable method of disposal of lead acid batteries is to recycle them at Resource Conservation and Recovery Act (RCRA) approved secondary lead smelter. This Panasonic SAV-LEAD Recycling Program will allow for you to arrange for the recycling of your SLA batteries from anywhere in the United States. The Program will accept Panasonic and other SLA batteries regardless of manufacturer. Panasonic will handle all SLA batteries returned in an environmentally sound manner designed to comply with all applicable Federal and State laws and regulations. Panasonic will send batteries only to fully-permitted secondary lead smelters that we believe meet the highest environmental standards. Once the SLA batteries are received by Panasonic, the cost to transport the batteries to the secondary lead smelter and the actual recycling costs will be borne by Panasonic.

How the program works

1) We encourage all of our customers to serve as SLA collection centers for your customers, thereby establishing a reverse distribution network between the end user and the secondary lead recycling facility.
2) All shipments to our national consolidation facility must be prepaid. No freight collect shipments will be accepted All freight collect and non-SLA batteries will be returned to the shipper.
3) Panasonic will maintain on file all necessary documentation for EPA reference A copy will be provided upon request
4) All batteries must be shipped, prepaid to our MBIA-SBD manufacturing facility that serves as our national consolidation facility (See *exception* below)

   SHIPPING ADDRESS
   MBIA-SBD
   1 Battery Boulevard
   Columbus, Georgia 31907
   Attn SLA Recycling Program

5) Only SLA batteries that meet the U.S. Department of Transportation (DOT) "NON-SPILLABLE" (49 CFR 17 159d) requirements will be accepted by this program
6) Panasonic reserves the right to alter or discontinue this program at any time.

Packaging Requirements

1) All SLA batteries must be fully discharged and packaged in a manner as to insure safe handling and conform to all applicable DOT regulations (49 CFR 173.159) A dab of silicon caulking or non-conductive tape on each terminal will ensure that no direct shorts occur during shipment.
2) SLA battery shipments should be made in pallet quantities whenever possible.
3) Palletized shipments should be secured with metal bands or poly-wrapped with stack height limited to four (4) feet.
4) SLA batteries shipped on pallets should be of uniform size or be stacked with the larger batteries on the bottom
5) SLA batteries should be stacked upright in a head-to-base arrangement Each layer should be separated by cardboard to prevent accidental shorting.
6) Smaller quantities of SLA batteries may be shipped via standard UPS. Be sure that each box does not exceed the UPS weight limit of 70 lbs A dab of silicon caulking or non-conductive tape on each terminal will ensure that no shorts occur during shipment.
7) The outside of every pallet and individual box must be labeled "NON-SPILLABLE" as required by DOT regulations This label must be visible during transportation

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Exception:

Full Truck Loads - All full-truck-load shipments of SLA batteries from anywhere in North America must be scheduled with our MBIA-SBD facility prior to shipment To schedule shipments to our MBIA-SBD facility, please call (706) 569-9979

Consumer Users of Panasonic SLA Batteries

All Panasonic SLA batteries are chemically identical to common automotive starter batteries and can be returned to any site that accepts automotive lead acid batteries for recycling. Examples include retailers of automotive batteries, automotive service centers, scrap metal dealers, etc. .

For additional information on this program or information on how to recycle other Panasonic batteries please contact Panasonic Batteries as listed on the front of this sheet

Transportation

All Panasonic sealed lead acid batteries are considered "non-spillable" for purposes of transportation by the U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAO), the International Air Transport Association (IATA) and the International Maritime Dangerous Goods regulations (IMDG). They are considered "non-spillable" by DOT by passing the Vibration Test and Pressure Differential Test as required in 49 CFR 173 159(d). They are also considered to be "non-spillable" by both ICAO and IATA by exceeding the requirements of Special Provisions "A67" as defined in their 1998 Handbooks.

Our batteries are authorized for transportation on deck or under deck storage on either a passenger or cargo vessel by passing the Vibration and Pressure Differential Tests as described in the International Maritime Dangerous Goods Regulations (IMDG)

To transport these batteries as "non-spillable" they must be shipped in a condition that would protect them from short-circuits and be securely packaged so as to withstand conditions normal to transportation. For transportation by a consumer, in or out of a device, they are unregulated thus requiring no additional special handling or packaging.

All of our lead acid batteries and their outside packaging, manufactured after September 30, 1995 are labeled "NON-SPILLABLE" per 49 CFR 173.159(d) If you repackage our batteries either as batteries or as a component of another product you must label the outer package "NON-SPILLABLE" per 49 CFR 173 159(d)